

Appln No. 10/020,506
Amdt date December 15, 2003
R ply to Office action of July 15, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-55. (Cancelled)

56. (Currently amended) A printed wiring board ~~on which an electronic device is mounted~~, comprising:

at least one carbon containing layer;

at least one electrically conductive layer that includes at least one circuit;

at least one dielectric layer located between the carbon containing layer and the electrically conductive layer; and

wherein at least one electrical connection exists between the carbon containing layer and the ~~electronic device~~circuit on the electrically conductive layer.

57. (Previously presented) The printed wiring board of claim 56, wherein the carbon containing layer comprises a substrate containing carbon impregnated with a resin.

58. (Previously presented) The printed wiring board of claim 57, wherein the substrate comprises woven carbon fibers.

59. (Currently amended) The printed wiring board of claim 57, wherein the ~~carbon containing layer~~substrate comprises unidirectional carbon fibers.

Appln No. 10/020,506
Amdt date Decemb r 15, 2003
R ply to Office action of July 15, 2003

60. (Previously presented) The printed wiring board of claim 57, wherein the resin is an electrically conductive resin.

61. (Previously presented) The printed wiring board of claim 60, wherein the electrically conductive resin has a dielectric constant greater than 6.0 at 1 MHz.

62. (Previously presented) The printed wiring board of claim 60, wherein the electrically conductive resin contains a pyrolytic carbon additive.

63. (Previously presented) The printed wiring board of claim 60, wherein the electrically conductive resin contains a silver oxide additive.

64. (Previously presented) The printed wiring board of claim 60, wherein the electrically conductive resin contains carbon powder as an additive.

65. (Currently amended) The printed wiring board of claim 5760, wherein:

the carbon containing layer is clad on at least one side with a second electrically conductive layer; and

an electrical connection between the carbon containing layer and the second electrically conductive layer is established by contact between the electrically conductive resin impregnated into the carbon substrate in the carbon containing layer and the second electrically conductive layer.

66. (Previously presented) The printed wiring board of claim 56, wherein the carbon containing layer comprises a carbon plate.

Appln No. 10/020,506
Amdt date December 15, 2003
Reply to Office action of July 15, 2003

67. - 70. (Cancelled)

71. (Currently amended) The printed wiring board of claim 57, wherein:

the carbon containing layer is clad on at least one side with an second electrically conductive layer; and

an electrical connection between the carbon containing layer and the second electrically conductive layer is established by contact between the carbon substrate in the carbon containing layer and the second electrically conductive layer.

72. (New) The printed wiring board of claim 56, wherein the electrical connection includes a lined through hole.

73. (New) The printed wiring board of claim 72, wherein the lining of the lined through hole contacts the carbon containing layer.

74. (New) The printed wiring board of claim 72, wherein the lining of the lined through hole contacts the circuit on the electrically conductive layer.

75. (New) A printed wiring board, comprising a layer containing carbon, wherein the layer containing carbon is a functional layer of the printed wiring board.

76. (New) The printed wiring board of claim 75, wherein the layer containing carbon includes a carbon fiber substrate impregnated with a resin.

Appln No. 10/020,506

Amdt date December 15, 2003

Reply to Office action of July 15, 2003

77. (New) The printed wiring board of claim 75, wherein the layer containing carbon is a ground plane.

78. (New) The printed wiring board of claim 75, wherein the layer containing carbon is a power plane.

79. (New) The printed wiring board of claim 75, wherein:
the layer containing carbon is divided into at least two regions;

a first region of the layer containing carbon acts as a power plane; and

a second region of the layer containing carbon acts as a ground plane.

80. (New) A printed wiring board comprising a layer containing carbon, wherein a portion of the layer containing carbon acts as a power plane.

81. (New) The printed wiring board of claim 80, wherein the layer containing carbon includes a carbon fiber substrate impregnated with a resin.

82. (New) A printed wiring board comprising a layer containing carbon, wherein a portion of the layer containing carbon acts as a power plane.

83. (New) The printed wiring board of claim 82, wherein the layer containing carbon includes a carbon fiber substrate impregnated with a resin.

Appln No. 10/020,506

Amdt date December 15, 2003

Reply to Office action of July 15, 2003

84. (New) The printed wiring board of claim 82, wherein a portion of the layer containing carbon also acts as a ground plane.